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Patent application of

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**COMBINATION LIFTING, PLATFORM, HANDTRUCK, SCAFFOLD,
FLOORJACK AND MECHANIC' CREEPER**

Sub 2
RELATED APPLICATION

Reference is made to my provisional application no. 60/228577

Filed 8/29/2000 entitled "Combination Lifting and Cart"

BACK GROUND OF INVENTION

Field of invention

This invention relates in general to a multi-use portable lifting, and more specifically, the invention discloses how a portable lifting can be converted into a tilt back hand truck, a regular hand truck, a scaffold, a floor jack or a mechanic' creeper.

Description of prior art

Various combination of lifting and moving devices have been known in the past.

U.S. patent 4,258,826 to Murray, discloses a hand cart that can be converted to a stepladder and further disclosing a winch type that can raise a load to a higher level.

U.S. patent 3,751,058 to Lasen discloses a combination snow shovel, wheel barrow and dolly.

U.S. patent 6,173, 811 to Dean Tonabene, discloses a combination hand truck, stepladder and basket carrier.

U.S. patent 6,189,653 to Laug Horst discloses a multi-purpose scaffold.

U.S. patent 4,494,626 to Dale a. ast discloses a combination stepladder and hand truck apparatus.

U.S. patent 4,488,326 to Chales w. chery, discloses a pallet dock lift.

What is needed is a combinations lifting, platform, tilt back hand truck, scaffold, floor jack and mechanic's creeper. None of the above patents describe the present invention.

Objects and advantages

(a) One object of this invention is to provide a combination lifting, platform, tilt back hand truck, work bucket, scaffold and a mechanic's creeper apparatus which is readily convertible from a compact lift table structure into a rigid multipurpose tool structure.

(b) To provide the combination of tools simple inexpensive to manufacture to operate and maintain.

(c) To provide a closure which can be used by consumers, without special tools or training.

(d) To provide a tool that can complete work from start to finish with out the need to transfer the load from one device to another that may cause injury.

(e) To provide a closure which can be achieved by consumers without the use of a big vehicle to delivery a load because this invention is compact and light weight, using only a small amount of storage compared to the previous product. This invention can help consumers and business' save money which would other wise be spent on the high cost of gasoline.

(f) A combination where all the loads are rest on an extensible device and front scissor legs. When the lift table is elevated then the load will rested on scissor legs which provide different functions from previous inventions.

(g) Another object of this invention is having a new and novel combination lift to provide a table, tilt-back and hand truck which can be delivered from the ground. Both load and combination lifting platform are made at different levels ; such as a truck, dock and roof with out using high cost dock or, fork lifts. By converting and transferring the weight from the lift table to the position to the tilt-back six-wheeler (climb up) then it continues moving the load all the way in side the truck bed where the folk lift is unable to reach.

(h) A combination support plate, provides a pivotally inserted support plate member which normally carries a load when used as a hand truck. It can move upward,

and lock in place providing a compact structure for storage. It can also be suspended and lowered to the ground, docked and used as a platform. Unlike the other previous product this mechanism can be used as a scaffold, work bucket and can also be used as a creeper or floor jack.

D1 (I) Another advantage of this invention is the lift assembly mechanism that can be folded for more compact and coupling to the rear portion of the lift table. Providing the maximum lowest point to the ground. Also the support plate can be put in lower position and converted to get to the platform making it possible to roll the load in and out also when attach with the hand crank pusher wheel, the platform and support plate can move slidable beneath many stacks of boxes in one pass.

(j) It can be elevated to the desired high using the support plate which picks up the load from the truck or dock.

(k) To provide a lighter product in weight than what already is known by using a light weight swivel wheels which can be rotated and used as a stop instead of using the lower frame assembly. The scissor legs are made of steel or aluminium square tubing instead of heavy steel bars, using the combination extended legs help the scissor legs only when needing more strength for lifting on heavier loads.

(l) Provide multiple function attachments which can be coupled using the same coupling device such as pockets, brackets and locking pins.

(m) The scaffold and stepladder provide lifting loads, for tools, lumber, heavy loads and work inside or outside the building. It is convenient when used with a remote control and tilted parallel with the ceiling, roof, pole, or work place for more convenient functions.

(n) A work bucket can carry liquids, rocks and sand. It can be lowered to the ground and roll in and out a load also elevating tilting and dumping the load.

(o) Further objective and advantages is to make it easier for the user to carry and transport cargo when the structure is in the hand truck position.

(p) A mechanic's creeper can be tilted enabling a labourer to work face down and closer to the work place. It can be elevated and lowered to access work places that are hard to reach.

(q) A mechanic's creeper works as seat to support a worker, an upright, or set tool box at the same time. It also elevates a tool box to the desired level for working conditions.

(r) Another advance is the floor jack, which loads or unloads automotive parts, large size spare tires and raise and align the vehicle at the same time.

(s) It supplies an incline for fast convenient loading and unloading with less effort.

(t) Using only a single lift drive for tilting, lifting, lowering and declining with an additional hydraulic device or other drive/control devices.

(u) The combination is available in different sizes and selections for different uses.

Drawing figures

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FIG. 1A is a side elevational view of the lift table in accordance with this invention ^{. It} ~~it~~ is shown in a lowered transport condition with an extensible device attached to the lower cross bar and platform;

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FIG. 1B is a side elevational view of the lift table in an elevated position;

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FIG. 1C is a left end view of the ^{lift table} ~~right~~ shown in FIG. 1A;

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FIG. 1D is a left end view of the ^{lift table} ~~right~~ shown in FIG. 1B;

FIG. 1E is a removed sectional view of the extensible device;

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FIG. 1F is a side view of ^{manually operated} ~~manually~~ a hand crank lift assembly;

FIG. 1G is a side view of the hydraulic lift assembly;

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FIG. 1H is a side view of the embodiment of FIG. 1G, showing ^{the} ~~a~~ hydraulic lift assembly in a lowered position;

FIG. 1I is a top view of FIG. 1B in its elevated position;

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FIG. 1J is an enlarged partial sectional view of the support plate, also a support plate channel taken along the line 1J--1J in FIG. 1I;

FIG. 1K is an enlarged partial sectional view of the support plate channel locking mechanism take along the line 1K--1K in FIG. 1I;

FIG. 1L is an enlarged partial sectional view of the support plate and support plate locking mechanism take along the line 1L--1L in FIG. 1I;

FIG. 1M is an enlarged partial section view of the support plate and support plate channel take along the line 1M--1M in FIG. 1I;

FIG. 1N is a partial exploded perspective view of a combination of extended legs and reinforce legs with wheel assembly;

FIG. 1O is a partial exploded perspective view of a combination extended legs and reinforce legs with a cross bar;

FIG. 1P is an enlarged partial view of the swivel wheels assembly taken along the line 1P--1P in FIG. 1I;

FIG. 1Q is a sectional view of the swivel wheels assembly taken along the line 1Q--1Q in FIG. 1P;

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FIG. 1R is an enlarged partial section view ^{of} the pivot pin assembly taken along the line ~~IR~~ ^{IR} IR--IR in FIG. 1A;

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FIG. 1S is a sectional view of the pivot pin assembly taken along the line IS--IS in FIG. 1R;

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FIG. 1T is a is an enlarged partial sectional view similar to FIG. 1M ~~except it is~~ showing the support plate ~~in the~~ lowered to the floor level;

FIG. 2A is a side view of the lift table in accordance with the invention is shown in a lowered. transport condition with a removable extensible device attached to an upper cross bar and platform cross frame;

FIG. 2B is a side elevtional view of the lift table in an elevated position;

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FIGS. 2C through 2F are side views of the lift table with an extensible device, ~~showing it's use~~ thereof;

FIG. 3A is a side view of the lift table shown lowered to the floor level and lifting stackers;

FIG. 3B is a side view of the lift table in an elevated position;

FIG. 3C is a side view of the hand crank pusher wheel;

FIG. 3D is shown in the hand truck usage ^{configuration} ~~condition~~ or standard two wheeler;

FIG. 4A is a side view of the lift table in use as a stepladder;

FIG. 4B is a side view of the lift table in use as a scaffold;

FIGS. 5A and 5B are views of the lift table in use as a work bucket;

FIGS. 6A and 6B are side views of the lift table in use as a mechanic's creeper;

FIGS. 6C and 6D are ^a side view and ^a top view of the lift table in use as a floor jack;

Summary of invention

The object of this present invention is to provide a combination lifting, platform, tilt back hand truck, scaffold, work bucket, floor jack, and mechanic' creeper. It is readily convertible from a lift table into a tilt back hand truck, or readily convertible from a lift table to a scaffold or readily convertible from a scaffold to any of the above mentioned functions ^{without} ~~without~~ the need to transfer the load between operation.

The present invention provides ^a pocket, ^a bracket, ^{an} extension legs, ^{an} extensible device and pin holes to couple a variety of different devices to achieve different function results. ^{This} ~~In this~~ ~~new product it~~ provides a function that uses both the lift table aspect and the modified or added on function aspect to provide results superior to ~~the sum of~~ using separate devices to perform the ~~two~~ functions. When ^{performing} ~~perform in~~ two ^{or more} functions ~~or more than two function, such as~~ ^{the} ~~provide a~~ tilt back hand truck ^a which can be delivered from the ground ^{both} load and ^{raise the} combination lifting platform ~~it self~~ to different levels such as a truck bed by converting and transferring weight from ^{the} lift table ^{configuration with} position to support plate ^{to the} or tilt back six wheeler ^{configuration}. Then lift table can be converted to a ~~convert to~~ hand truck two wheeler and continue to move the load all the way inside the truck bed. ^{These tasks are performed via} ~~All of this on the same~~ modified lift table ^{to} and without the need for transfer of the load from one device to another device. without additional hydraulic cylinders or other drive/control devices.

Description-Figs.1 to 6D

FIGS. 1B and 1D. depicts a scissors-type hydraulic-driven or screw thread-driven, ^{lift table} ~~liftable~~ 10. Two ^{pairs} ~~pair~~ of scissor legs 15a, 15b, 15c, 15d, made of steel or aluminium tubing are mounted at ^{at} ~~a~~ first end, e.g., using pivot ^{pins} ~~pin~~ 16a, 16b, (between the cross bar 42d) ^{at} ~~to~~ both sides of platform cross frame 17a, 17b, and ^{pivotaly attached wheels} ~~pivot~~ to both front ^{wheel} ~~wheel~~ 18a, 18b, (between the cross bar 42c) ^{at a} ~~to~~ a lower portion of the scissor legs. The upper support frames include the platform cross frame 17a, 17b, and deck 11. The opposite ends of the scissor legs are coupled to both rollers 16c, 16d and swivel wheels ^{to} ~~assembly~~ 18c, 18d. ~~FIG. 1P to lower portion of scissor legs part of~~ ~~scissor motion described below, are free to move along horizontal surfaces of wheel 18a, 18b, swivel wheels 18c, 18d, FIG. 1P.~~ The first pair of scissor legs 15a, 15b ^{are} ~~pivotaly~~ coupled,

pin 12a
 defining a scissor pivot ~~pin 12a~~ (pivot axis) and the second pair of scissor legs 15c, 15d are
 pivotally coupled at the same axis ~~pin 12b~~ ^{at pin 12b}. A drive or motive device such as a hand operated
 hydraulic pump or other control may be provided for extending or retracting the hydraulic
 cylinder 13 and cylinder rod 14. Other drive or motive devices are screw thread -driven which
 may be hand cranked, powered by electric hand drill or powered by electricity or air. Energy
 for screw thread-driven ^a ~~device~~ may be provided from an on-board battery and /or from electric
 power via a cable (not shown). Optionally, a switch or other control may be provided such as
 remote control (not shown).

depicted
 In the ~~depicted~~ embodiment, the hydraulic cylinder 13 is pivotally coupled at one end to
 pivot pin 29 and ~~the~~ lift arm 23, extending between the ball joint 26 and cross bar bracket 34d.
~~The ball joint 26 and cross bar bracket 34d are mounted~~
^{Mounted} at the center of cross bar 42b connected to the scissor legs 15a, 15d and pivot pin 25
^{via cross bar bracket 34d.}
 (pivot axis) ~~mounted to lift arm 22 and pivotally coupled at the opposite end, to the lift arm~~
~~22, extending between.~~ The ball joint 24 and cross bar bracket 34c are mounted at the center
 of lower cross bar 42a and connected to the scissor legs 15b, 15c and pivot pin 25 (pivot
^{via lower cross bar 42a}
 axis). When the hydraulic cylinder 13, cylinder rod 14 and support rod 27 are extended they
 cause lift arm 22 and lift arm 23 to spread apart pushing the cross bar 42b and deck 11
 upward as in FIGS. 1B, 1D and 1G. When the hydraulic cylinder 13 is retracted it causes the
 lift arm 23 to lower the rear deck cross bar 41 and the platform assembly. ^{This is best}
~~Best~~ seen in FIGS.
 1H and 3A.

In the depicted embodiments of FIGS. 1A and 1B the rear deck cross bar 41 is attached
 to bracket 55a, 55b by ^{welding the bracket 55a} ~~welding~~ and is pivotally attached at one end to a extensible rod 50 and
 to the extensible device 40 by locking pin 54 inserted ⁱⁿ ~~to~~ holes 200a 200b 200c 200d. The
 extensible device 40 is rested on bracket 51 and attached by locking pin 53a to cross bar 42a,
^{adjacent}
 the lower end of scissor legs 15b, 15c (FIG. 1E). When the hydraulic cylinder 13 retract,

causing the front cross bar 42d, ~~and~~ ^{and} support plate channel 43 ^{or} pivot pins 16a, 16b (FIG. 1A) ^{as} ~~are~~ mounted to the upper end of scissor legs 15b, 15c to tilted and lowered ^{to a} best seen in FIG. 1A tilt-back-six wheeler position. Also, when elevated, the lift table 10 provides lifting and ^{when lowered,} tilting, ~~at the same time as lowering~~ the lift table 10 provides tilting and ^{lowering of the} lowers lift table 10. The lift table 10 can be used ^{for} as a number of functions such as a tilt back hand truck, as a inclined lift table 10, as a portable loading dock and also used as a transporting cart. The device can be used to load and unload boxes, plywood, glass, table and office partition ^{and} ~~also~~ can be pushed by hand. The handrails 420a, 420b may be used for securing the load from ^{as} falling best seen in FIG. 4B. For unloading the load from lift table 10 to ^a van or truck, adjust the extensible rod 50 a little higher than ^{the} van or truck. To provide an incline for deck 11, ~~then~~ release the securing deck pin 221 ^{attached} ~~with attach~~ to bracket 220 ^{or} welded to crossbar 42b, then unlock the support plate channel lock 61 ^{and} kick the support plate 49 to ^a lowered position so that it rests on the van bed and moves the load over the approach ^{ramp} ~~from~~ deck 11 to the van, ~~is~~ ^a also using a minimum afforded and man power. When unloading from ^a van to lift table 10, adjust ^{extending} ~~extend~~ leg 72a, 72b, (FIG. 1N) higher than rear deck 11 to provide an incline, then rest the support plate 49 on the van bed or truck bed. Then move the load to lift table 10 and lower it to convert to tilt-back position. Then lift crossbar 42a or step on support plate 49 ^a and convert to ^{the lift table} hand truck position ^{as shown in} FIG. 3D. Then move ^{the} load off the support plate 49. The extensible device 40 can be folded-in ^{with} ~~and out between~~ extensible rod 50. Micro adjust-stop pin 52 ^{permits adjustment to a} ~~to~~ precise height or angle. ^{Converting} ~~Convert~~ from tilt-back position to ^a platform position (FIG. A1), ^{provides} ~~to provide~~ an incline to quickly roll loads on and off. ~~To use as a t-bar dolly by attach to bracket 44 to locking pin 303. It can be~~ ^{The lift table can} also used as a hand crank wheel pusher 48 (FIG. 3A), (FIG. 3C) or electric wheel pusher (not shown).

In the embodiment of FIG. 1F, ^{showing the} ~~The~~ screw thread-driven lift assembly. The ball joint 38b is welded to the left ^{portion} ~~portion~~ of the lift arm 32a. The right side of the lift arm 32a is attached to the folding support arm 33 which is attached to holes using ^a ~~bolt and nut~~ 130a, 130b on both sides, which are also attached to the stop pin 36a, 36b, in the slot 37a, 37b, ~~Both sides~~ to permit movement ^{of the} ~~configuration~~ support arm 33, ^{which is} ~~possible~~ restrained by stop pin 36 ~~(lift arm 32a and support arm 33 are the same axis)~~. The lift arm 32a is pivotally attached to the right side of lift arm 32b by ^a ~~bolt and nut~~ 34a, 34b, (pivot axis) and the left side of lift arm 32b is welded to ball joint 38a. A nut 121 ~~attached~~ is welded to the upper center of bracket 122 and pivotally attached to top edge ^{of both} ~~Both~~ sides of lift arm 32b using a bolt and nut 123a, 123b, ^{as shown in} ~~the~~ FIG. 6D,. A threaded shaft 39 is attached between nut 121 and ^{the} ~~hand~~ crank gear assembly. When cranked, 125a is rotated, which causes lift arm 32a 32b to spread apart and raise the lift table 10, ^{when} ~~or~~ ^{the lift table} ~~drawn together~~, causes to lower ~~the table~~. The hand crank assembly, ^{including} ~~included~~ gear bracket 126, is provided with coupling hole 131. Threaded ^{shaft} ~~shaft~~ 39 is welded to gear 129a, ^{at holes} ~~by welded~~. Holes 127a, 127b provided for shaft 125b, is ^{which welded} ~~welded~~ to gear 129b. The hand crank 125a is coupled to shaft 125b and joint 125c. The gear bracket 126 is attached between the top edge of the folding support arm 33 ~~to pivot attached~~ by nuts and bolts 134a, 134b, 134d, 134f.

In the ^{the depicted} ~~embodiment~~ of FIG. 1I, the construction of the lift table 10 ~~which~~ includes a flat loading surface, or deck 11, ^{and} ~~may be made from wood, steel, fibreglass~~ (with or without a rough surface). The deck 11 is ^{supported} ~~support~~ by a plurality of cross bars 17, 41, 19a, 19b, 19c ^{and a} ~~support plate channel 43~~ longitudinal platform cross frames 17a, 17b and brackets 55a, 55b provided with select holes 200a, 200b, 200c, 200d, located between cross bar 19a and rear deck cross bar 41. The platform is secured by pin 221 and ~~secure~~ ^{the} ~~bracket~~ 220 which is welded on rear deck cross bar 42b near upper portion of scissor leg 15a. Deck 11 has pockets

403a, 403b, 403c, 403d for stepladder 400a and pockets 405a, 405b, 405c, 405d, for rails 420a, 420b. There are holes 601a, 601b, for head rest 600 and pockets 403a, 403b, ^{that also} can be used for work bucket 500.

shown in

Lift table 10 includes a pivoted combination support plate 49 ^{FIGS. 1J, 1K, 1L, 1M} and 1T. ^{Support plate 49} It can be removed from the support plate channel 43 by pressing on support plate channel lock 61 ^{which} is mounted to support plate channel 43 by bolt 60 causing the spring 68 to collapse ^{to} and remove the support plate 49. On first and second end, the support plate 49 included ^s support plate rod holder ^s 63a, 63b, ^{which are} attached by clamps 64a, 64b, ^{that} are welded to support plate 49. ^{Stops} also stop 66a, 66b, ^{are welded} welded to support plate 49, and spring 65a, 65b, are ^{positioned} positioned between rod holder ^s 63a, 63b, and stop ^s 66a, 66b. To remove support plate 49 completely from support channel 43, ^{rod holders} then press rod holder 63a, 63b, ^{are engaged} and remove support plate 49 ^{as shown in} from support channel 43 FIG. 1J. The support plate 49 can be swung upwardly when the lift table 10 is being transported or stored. The support plate 49 can be lowered, for engagement with the floor, ^{or} dock, ^{ramp} as a approach ^{lump} FIGS. 1T and 3A. The lift table 10 can be suspended in its lowered position by engagement with a stop 70, ^{by a} or shoulder welded to support plate 49 in FIGS. 1T and 3A. The support plate 49 can be raised ^{locked} in to the elevated position, and ^{The lift table} lock in to support plate channel 43 as seen in FIG. 1B. ^{It is also} It is also can be used as a standard hand truck, two-wheeler or tilt-back six-wheeler when support plate 49 is locked ^{as shown in} in to channel 43 FIGS. 1A, 1L, and 1M. The support plate 49 is available in different sizes ~~and some make for work bucket (not shown).~~

In the embodiments depicted in FIGS. 1N and 1O, ~~are a~~ combination extend legs are provided for ^{by insertion} the coupling to lift table 10 by extending legs 72a, 72b, 72c, 72d, ^{By inserting} of the extending legs 72a, 72b, 72c, 72d ^{them} in the lower end of the scissor legs 15a, 15b, 15c, 15d, respectively. The lower end of

the scissor legs are also included with an adjust-stop pin 81a, 81b, 81c, 81d. For adjusting ^{the height of extending} high to extended legs 72a, 72b, 72c, 72d, ~~they are provided with~~ ^{are provided extending} holes 80a, 80b, 80c, 80d, 80e, 80f, 80g, on each of the ~~extended legs~~ ^{extending} the extend legs and reinforce available in different ~~range and sizes.~~

In FIGS. 1N and 1O, cross bar 73a, ^{is} ~~are~~ coupled by welding ^{to} the wheels ^{members 75a, 75b,} to support the shaft mounted to wheels members 75a, 75b, (Only the cross bar 73a is equipped with wheels).

Cross bar pockets 74a, 74b, 74c, 74d are coupled by welding the top of cross bar 73a, 73b.

Cross bar pockets 74a, 74b, 74c, 74d are included with locking pins 77a, 77b, 77c, 77d. They are inserted ^{into extending} with lift table 10 scissor legs to extend legs 72a, 72b, 72c, 72d, ^{to connect extending} and insert extend legs ^{72a, 72b, 72c, 72d} to cross bar pockets 74a, 74b, 74c, 74d, ^{via} Then press locking pins ~~77a, 77b, 77c, 77d,~~ to seated holes 79a, 79b, 79c, 79d, ^{onto} with the locked cross bar 73a, 73b, ^{extending} The extend legs 72c, 72d and cross bar 73b when attached together can be used as a stop. They help to prevent lift table 10 from rolling away. ^{They} ~~It also~~ can be extended to elevate one end of the lift table 10 ^{loading} ^{unloading} provides an incline roller for fast load or unload and for reinforcing tubular legs. The extend legs 72a, 72b, 72c, 72d, and crossbar 73a, 73b, can be remove ^d insert ^{ed} or extend ^{ed} when the lift table 10 ^{is in the} ~~in~~ lower position.

In the embodiments depicted in FIGS. 1P and 1Q, the swivel wheels ^{assemblies} ~~assembly~~ 16a, 16b, are located on both ^{sides} ~~side~~ of lift table 10. They include ^s brackets 90a, 90b, 91a, 91b, and hub ^s 86a, 86b. They are welded together as shown, with shaft ^s 85a, 85b, then welded to ^{the} lower end of scissor legs 15b, 15c, and attached to hub ^s 86a, 86b. The swivel wheels 84a, 84b, 84c, 84d are mounted to brackets 90a, 90b, using nuts 88a, 88b, 88c, 88d, and bolts 87a, 87b, 87c,

87d. (The swivel wheels help cut down on weight instead of using the lower frame with the ^{assemblies} wheels ~~assembly~~.) Wheels may be made of rubber ~~like~~ or steel. The swivel wheels ^{assemblies} ~~assembly~~

16a, 16b can be rotated 180 degrees to provide a stop, preventing the lift table 10 from rolling away.

In the embodiments depicted in FIGS. 1R and 1S, a pair of pivot pins 12a, 12b, (12b shown in FIG. 1C) ^{at} are the center of hinges 102a, 102b. ^{The hinges 102a, 102b} They are welded to the lower portion of scissor legs 15a, 15d. The pivot pins 12a, 12b are ^{connected} welded to the lower portion of the scissor legs 15b, 15c, bolt by nuts 104a, 104b, ^{causing} caused the pivot axis to be at a lower portion of the scissor legs. ^{This configuration provides a} It provided space for ^{extending} extend legs 72a, 72b, 72c, 72d, ^{making} made it possible to insert ^{into a} into a square tube ^{to} to help reinforced the scissor legs 15a, 15b, 15c, 15d.

In the embodiments depicted in FIGS. 2A and 2B, the rear deck cross bar 41 is mounted with brackets 55a, 55b and locking pin 54. ^{The deck is} The deck is extended to pivot at one end of the extensible rod 50. ^{The} The extensible device 40 (FIG. 1E) rests on bracket 51b, locking pin 53b and cross bar 42b. The upper end of the scissor legs 15a, 15d, (FIG. 1A) ^{and the} extensible device 40 rested on cross bar (42a). When the lift table 10 ^{is} raised, the angle of support plate 49 and deck 11 ^{is} rotated forward and upward ^{as} at the time which was defined by the angle ^{of extensible} and extended device 40. By ^{selecting} selected holes 200a, 200b, 200d, 200d, on brackets 55a, 55b (200d ^{tilts} tilt or declines more than 200a) ^{the} the extensible device 40 can be ^{adjusted relative to} adjusting adjust-stop pin 52 to extend the extensible rod 50 ^{to use lift table 10} used as a tilter device or incline device.

In the embodiments of FIGS. 2C, 2D, 2E, 2F, the side view of the tilt-back six wheeler, ^{configuration} two wheeler hand truck, ^{configuration} and the elevation of the lift table 10. ^{is shown} It shows the show thereof, as it ^{The lift truck 10} can be used to load and unload box 201 from the truck bed 200.

FIG. 2C. shows the lift table 10 lifting and transporting box 201, from ^a the truck bed

200. FIG. 2D. It ^{shows} ~~show~~ the device transformed tilt-back six-wheeler position to ^{from a} ~~standard~~ ^a two-wheeler ^{position which} also can transferred the weight box 201 to the truck bed 200. The safety lock 202 is ^{attached} ~~attach~~ to the truck bed ^{to}. Using safety lock 202 ^{attach} ~~to~~ the support plate 49, ~~sets to~~ prevent ^s the support plate 49 from sliding away or tilting. Then rotate hand truck around safety lock 202 between loading platform or dock to truck rear end loading platform. FIG. 2E, shows the lift table 10 ^{with} ~~is~~ extended ^{assemblies} ~~to~~ scissor legs and wheels ^{assembly} 16a, 16b, 18a, 18b. It also transforms lift table 10 back to tilt-back position. It will rest on the support surface, releasing safety lock 202, then stepped on to the cross bar 42a. On heavier loads it prevents lift table 10 from the tilting use of the extending legs 72a, 72b. With the cross bar 73a move forward can pass the center gravity of the load and move the lift table 10 away from the truck bed 200. Then lowering the lift table 10 to a tilted back position, the lift table 10 secured in the desired angle. FIG. 2F shows the lift table 10 is lowered in transporting. To load box 201 and lift table 10 on the truck 200, reverse the procedure (2F, 2E, 2D, 2C,). ^{The support} ~~Support~~ plate safety lock being selected from vise grip lock, foot control lock, remote control lock, wire pulling lock and automatic self locking ^{the group consisting of a} ~~ing like~~.

In the embodiment depicted in FIG. 3A, ~~shown in~~ lift table 10 is shown lowered to floor level. The support plate 49 is removed from the support plate channel 43 and lowered, for engagement with the floor, as seen in FIG. 1T. The extensible device 40 is attached to the hand crank pusher wheel. In FIG. 3C, the locking pin 303 is mounted to bracket 44, ⁱⁿ ~~with the~~ locking pin 303 or locking pin 53a (bracket 51). ⁱⁿ ~~In~~ such a manner that cranking the extensible device 40 causes the lift table 10 and support plate 49 to move forward in relation to the floor. ^{The lift table can then} ~~Then it is able to~~ lift many ^{stacks} ~~stages~~ of boxes 301 in one pass. In the embodiment of FIG. 3B, ^{the} ~~shown in~~ lift table 10, ^{is in} ~~an~~ elevated position, ^{It is ready} ~~it is ready~~ to tilt and unload boxes 301 ^{without a} ~~as near to~~ a truck or van, an elevated loading dock, tilting table or loading pallet ^{with out the equipped} ~~fork device~~. It is can be ^{raised at an angle} ~~angle raise~~ similar to FIG. 6A. 6B.

In the embodiments depicted in FIGS. 3A and 3C, ^{the} ~~The~~ hand crank pusher wheel is comprised of a wheel 310 welded to one side of the center gear 309 and attached to the wheel support 320 by the locking pin 303. ^{The} ~~On the~~ upper portion of the wheel support 320, ^{is} ~~is~~ provided with a pocket 316 hole and a locking pin 321 attached to extensible device 40. A pair of springs 318a, 318b, are hooked to the lower edge of the select lever 314 by hole 319. The opposite end is hooked to a one way push mechanism 340. Both ends ^s are hooked to holes 317a, 317b. The wheel support 320 is provided with pivot pin 313 ^a ~~and~~ ^{that} attaches to a one way mechanism 340 and pivot pin 315 ^a ~~to~~ ^{that attaches} the select lever 314. ^{Pushing} ~~When pushing~~ the select lever 314 to the left ~~it~~ will cause the spring 318a to pull the one way ~~the push~~ mechanism 312 ^{340 to pivot} ~~is to tilted~~ upon release of lever 314, and lower to the right side and locking ~~ing~~ on center gear 309 in such a manner, that ~~when~~ cranking extensible device 40 to the left ~~it~~ causes wheel 310 to rotate ^{clockwise} ~~clock wise in one way~~ so as to reverse push select lever ³¹⁴ to the right side and crank extensible device 40 to right. It ~~is~~ can be set up ^{to} ~~and~~ ^{and lift at an angle} operate ^{angle lift} similar to FIGS. 6A, 6B.

^{The} ~~In the~~ embodiment depicted in FIG. 3D, ^{shows} ~~shown in~~ the hand truck usage condition or standard two wheeler. The support plate 49 ^{is} ~~locked in~~ support plate channel 43. This achieves a minimum width thereof between the rearward surfaces of the wheel member 18a, 18b ^{which} ~~with~~ can be stored in a minimum amount of space. The hand truck can be stored ^a ~~in~~ car trunk or ^{inside a} ~~used in side~~ home and transform ^{ed a} ~~to~~ step ladder FIG. 4A or ^a ~~scaffold~~ FIGS. 4B, 2A and 2B.

In the embodiments depicted in FIGS. 4A and 4b, lift table 10 is used as a scaffold and ~~a stepladder in position~~. Stepladder 400a, is coupled to lift table 10 by coupling ends 402a, 402b by ^{insertion to} ~~insert in~~ the upper deck pockets 403a, 403b, 403c, 403d. The stepladder 400b is coupled to lift table 10 by coupling end 402c, as seen in FIG. 1I and 1T. ^{Coupling end 402c is} ~~They are~~ inserted in support plate channel 43, ^{and} ~~then~~ rotated by the swivel wheels assembly 16a, 16b, at a 180

degrees, ^{to operate} as floor stop set to prevent a roll away. The ladders 400a, 400b can be stored below the deck 11 FIG. 4B. The lift table 10 is used as a scaffold that positions ^{extending} extended legs 72a, 72b, 72c, 72d. Inserted ^{into} to scissor legs 15a, 15b, 15c, 15d and cross bar 73a, 73b, ^{the extending legs} they are attached to the ^{lift table 10 as shown in} extended legs (FIGS. 1N, 1O,). A pair of hand rails 420a, 420b are coupled to the lift table 10 by coupling ends 404a, 404b, 404d, 404e, ^{and inserted} insert in pockets 405a, 405b, 405c, 405d respectively ^{as} shown in 1I.

The device can be used ^{to perform} in a number of functions, such as a portable loading dock, for overhead maintenance repair, lifting loads, tools, and lumber. The operator may stand on the deck and ride it up to the proper elevation, ^{while under the} while under the control of an assistant or ^{of} control by the operator as he rides (a remote control device not shown). The deck can be ^{tilted} tilted parallel to the ceiling, roof, pole or work piece for more convenient repair. Another possible use is the telescopic supports that ^{ensure} ensure adaptation to any standing surface contour. Extensible and retractable climb-through apertures at the end of the deck 11 permit ~~the~~ safe access to the scaffold movement surface.

In the embodiments depicted in FIGS. 5A, and 5B, ^a the work bucket 500 is coupled to lift table 10 by coupling brackets 502a, 502b. They ^{are} welded to both sides of the work bucket, ~~and~~ inserted in the upper deck pockets 403a, 403c and bolted by 503a, 503b. The front edge of work bucket 500 is welded to bracket 501 (FIGS. 1K and 1L) and inserted ^{into} to support plate channel 43, ^{and locked} then locking by support plate channel ^{lock} locked 61. It can be operated to function similarly to FIGS. 2A and 2B. FIG. 5B can be elevated, load ^{ed} or unload ^{ed} onto a truck bed . The work bucket allows you to lower ^{a load} to the floor level, ~~and let you low load on an off~~ of It is designed to position containers with a part within fingertip ~~and~~ reach the assembly line. Workers and machine operator ^{also} can eliminate ^{the} bending and stretching that is required to remove component ^s from deep baskets and boxes.

In the embodiments depicted in FIGS. 6A and 6B ^{the} lift table 10 is lowered to the floor level. The extensible device 40 ^{is} attached to ^{the} platform frame and upper cross bar 42b. The head rest 600 is coupled to deck 11 by coupling pins ^{with} and holes 601a, 601b, ^{inserted} inserting in to the upper deck. The mechanic's creeper works as a seat support. A worker can set the tool box at the same time, ^{and} ^{the} also elevate the tool box at a desired level for working condition. It is convenient with a remote control and useful for a business or at home. It can be inclined or ^{raised at an angle} ~~angle raised~~ to support the worker when working in a face down position ~~to~~ or ^{used for hard to reach places} ~~reach where it's hard to get at~~. It's easy to adjust it ^{higher} ~~high~~ when you work.

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In the embodiments of FIGS. 6C and 6D ^{the} lift table 10 is used as a floor jack. ~~Position~~ FIG. 6C shows the lift table 10 ~~is~~ lowered to the floor level. The extension 610 is inserted between the lift arm 32b or lift arm 23 in FIG. 1G and uses a top ^{portion} ~~portion~~ of extension 610 to elevate and lift the frame of a vehicle. A floor jack can be remove the lift arm assembly from cross bar bracket 34c, 34d by removing pin 611 from the ball joint 24, 26, 38a, 38b. A floor jack ^{is} ~~of the type~~ typically employed for automotive repair work ^{and} ~~that~~ can load and unload automotive parts, spare tires, ^{as well as} raise and angularly align ^a transmission with engine. A floor jack can perform ~~in~~ two functions by ^{using} ~~used~~ extension 610 ^{to} lift the vehicle with load on deck at the same time. Also ^{it} is portable, foldable, and light weight and can fit in ^a ~~the~~ car or trunk.

lift table
Abstract: A combination ^{lifting} platform, tilt back hand truck, scaffold, work bucket,

floor jack and mechanic' creeper ~~is disclosed~~. The combination is a portable and foldable unit,

that converts into a tilt back hand truck having two wheels or six wheels that ^{have} ~~having~~ a lift

table ^{with} ~~having~~ extensible legs, ^{an} ~~and~~ extensible device, a platform having flexible combination

support plate, and ^{an} ~~approach~~ ^{ramp} ~~lamp~~. This combination also provides coupling device such as

^a ~~a~~ pocket and bracket, which can be coupled to a plurality of space attachments for multiple

purposes such as ^a scaffold, ^a work bucket, ^a floor jack, ^{or a} mechanic' creeper.

EXAMINER'S AMENDMENT

1. An extension of time under 37 CFR 1.136(a) is required in order to make an examiner's amendment which places this application in condition for allowance. During a telephone conversation conducted on December 18, 2003, Annop Magness requested an extension of time for 3 MONTH(S). Mr. Magness paid the required fee of \$475.00 on January 8, 2004 (by check) for this extension and authorized the following examiner's amendment. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3. The application has been amended as follows:

Claims 3-17, 19, 22, 23, 26, 28-30 and 35-45 have been canceled.

New claims 46-74 have been inserted.

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1. 46. A multiuse platform comprising: a wheeled support assembly having a lower crossbar, a first and a second pair of scissor legs having ends; said first pair of scissor legs connected to said lower crossbar;

F-1 a platform frame assembly positioned above said wheeled support assembly, said platform frame assembly having a pivoted end, said second pair of scissor legs mounted to said pivoted end, said platform frame assembly lying on top of an upper cross bar of said first and second pair of scissor legs and each of said pair of scissor legs being pivoted together intermediate their ends, so that said platform frame assembly is movable upwardly and downwardly in relation to said wheeled support assembly;

a lift structure connected to said lower cross bar on said wheeled assembly and to said upper cross bar for lifting said platform frame assembly with respect to said wheeled assembly, said lift structure comprising an upper arm and a lower arm, said upper arm being pivotally connected to said upper cross bar and said lower arm being pivotally connected to said lower cross bar, said upper and lower arms being pivoted together;

a lift drive structure connected to said lift structure for raising said platform frame assembly to a desired elevation, said lift drive structure being selected from a group consisting of: a screw thread jack, a telescoping support, a hydraulic cylinder, a hydraulic actuator and a screw actuator;

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an extensible structure different from said lift structure having a first end pivotally mounted to said rear end of said platform frame assembly and said second end pivotally mounted into at least one of said upper cross bar and said lower cross bar;

a platform having first and second ends and having said first end connected to said extensible structure and said second end pivotally attached to said platform frame assembly to permit angular raising of said first end of said platform with respect to said platform frame assembly; said platform having a locking assembly, said locking assembly releasably locking said platform to said platform frame assembly;

said platform frame assembly having one end connected to a support plate by a support plate channel, a support plate locking assembly releasably connecting said support plate to permit releasable locking of said support plate to said platform frame assembly;

said support plate locking assembly being different from said platform frame locking assembly and being pivotally connected to a first and a second rear end of said support plate;

said platform having lower crossbar brackets and said first pair of scissor legs being mounted in a detachable manner, by an attached pusher wheel, at least one pocket, and a self locking support plate channel locking structure, used to modify the configuration of the multiuse platform to perform as a stepladder and scaffold, a work bucket, a floor jack and a mechanic creeper.

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²²47. The multiuse platform of claim ~~46~~¹ wherein said platform frame assembly can be simultaneously vertically and angularly raised.

³48. The multiuse platform of claim ~~46~~¹ wherein said lift structure includes a single lift drive structure which is pivotally connected to said upper and lower arms so that said upper and lower arms can be folded together for compact storage.

⁴49. The multiuse platform of claim ~~46~~¹ wherein said upper and lower arms are pivotally coupled together at one end and the other end of said upper arm is pivotally connected to said upper cross bar by a ball joint assembly and said lower arm is pivotally connected to said lower cross bar with a ball joint assembly.

⁵50. The multiuse platform of claim ~~46~~¹ wherein said support plate locking assembly includes a bolt, a spring, a lock, and said support plate channel.

¹¹⁹51. The multiuse platform of claim ~~50~~⁵ wherein said support plate channel is on the pivoted end of said platform frame assembly to lock said support plate in a position at an angle in relation to said platform frame assembly when said support plate is in a hand truck usage position.

²⁰52. The multiuse platform of claim ~~50~~⁵ wherein said support plate locking assembly includes a spring, a stop, a slot and rod holder attached between a first and

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second end of said support plate so that said support plate is pivotally mounted on said platform frame assembly to swing from a position where the support plate lies on top of said platform frame locking assembly to a position extending downward to hang from the end of said platform frame assembly; rods positioned between said support plate and said platform frame assembly locking said support plate with respect to said platform frame assembly at selected angular positions so that said platform frame defines a retractable support plate approach ramp system for joining said platform to an adjacent loading surface.

21/ 53. The multiuse platform of claim 50 wherein said spring can be compressed to release said support plate locking assembly to release said support plate from said platform frame locking assembly.

6/ 54. The multiuse platform of claim 46 wherein a support plate safety lock is pivotally mounted to an adjacent loading surface rear end.

77/ 55. The multiuse platform of claim 46 wherein said extensible structure includes first and second members telescopically mounted and movable into a selected one of a plurality of positions adjusting the length, and releasably lockable in one of said plurality of positions.

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²³
~~56~~ 56. The multiuse platform of claim ⁷~~55~~ wherein said platform frame assembly cross bar bracket permits adjustment of the platform frame assembly to a plurality of positions adjusting the angle of the platform frame assembly.

²⁴
~~57~~ 57. The multiuse platform of claim ⁷~~56~~ wherein said extensible structure has an upper end pivotally mounted onto said platform frame cross bar and a lower end pivotally connected to said lower cross bar so that said platform can be raised to an angular lift table position and lowered to a hand truck usage position.

²⁵
~~58~~ 58. The multiuse platform of claim ⁷~~57~~ wherein said extensible structure is removable from said upper and lower cross bars and said extensible structure is releasably lockable into a selected one of a plurality of positions adjusting the angle of said platform.

²⁶
~~59~~ 59. The multiuse platform of claim ⁶~~58~~ wherein said extensible structure is connected to said upper cross bar and to said platform frame assembly when said platform is in a hand truck usage position; said support plate being locked by said support plate safety lock to said adjacent loading surface and when said platform is lowered, said platform is folded by pivoting about top ends of said first pair of scissor legs to raise a load and the platform to said adjacent loading surface.

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26 60. The multiuse platform of claim 55²⁷ wherein said extensible structure is pivotally attached to said upper cross bar by means of a removable stop pin through a bracket hold in said upper cross bar so that said extensible structure can support said upper cross bar or rotate to a folded position below said platform for use as a hand truck.

F-1 61. The multiuse platform of claim 46⁸ wherein there is a first and second pair of extendable reinforced legs associated with a lower end of each of said first and second pair of scissor legs so that said extendable reinforced legs, respectively on said first and second pairs of scissor legs, can be moved away from pivots connected between said scissor legs.

62. The multiuse platform of claim 61⁸ further including a lock structure on said first and second pair of scissor legs so that said first and second pair of extendable reinforced legs can be releasably locked to said first and second pair of scissor legs.

63. The multiuse platform of claim 46⁹ wherein said pusher wheel is pivotally and removably connected to said lower cross bar bracket when said platform and said support plate are in a position lower to floor level to facilitate sliding of said support plate below a load.

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64. The multiuse platform of claim 46 wherein said stepladder and scaffold include a removable rail attached within a support pocket in said platform to act as an anti-falling device.

65. The multiuse platform of claim 64 wherein said stepladder is removably connected to said pocket in said platform and a support plate channel in said platform for selective use for performing work at a high elevation and for raising a load.

66. The multiuse platform of claim 65 wherein said platform and said scaffold can be utilized for high elevation tilting.

67. The multiuse platform of claim 46 wherein said extendable reinforced legs are inserted into at least one of said first or second pair of scissor legs to shift the center of gravity of a load to prevent the platform from rolling over and tilting.

68. The multiuse platform of claim 46 wherein said first or second pair of scissor legs are tubular and said first pair and second pair of scissor legs being pivoted together outside of the tube of said tubular legs on pivot pins so that said extendable reinforced legs are slideable into said tubular legs to reinforce said tubular legs.

69. The multiuse platform of claim 46 wherein a first and a second pair of extendable reinforced legs is associated with a lower end of each of said first and

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second pair of scissor legs so that said extendable reinforced legs and cross bar are removable to reduce the weight of the platform.

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70. The multiuse platform of claim 46 wherein said extendable reinforced legs are releasably lockable to the wheel support assembly and lower cross bar.

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71. The multiuse platform of claim 46 wherein said work bucket is configured to load and unload and is configured for high elevation tilting and dumping.

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72. The multiuse platform of claim 46 wherein said extensible structure has an upper end pivotally mounted to said upper cross bar and a lower end pivotally connected to said upper cross bar and said second pair of scissor legs so that said platform can be raised at an angle for use as a mechanic creeper.

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73. The multiuse platform of claim 46 wherein said extensible structure has an upper end pivotally mounted to the upper cross bar and a lower end is pivotally mounted to said upper cross bar and said second pair of scissor legs so that said platform can be configured for use as a floor jack to load parts at an angle by raising said platform.

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74. The multiuse platform of claim ~~46~~ wherein said support plate safety lock assembly is selected from a group consisting of a foot control lock, a remote control, a vise grip lock, a wire pulling lock and an automatic self locking mechanism.

4. Pages 1-5 of the specification have been amended as:

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**COMBINATION LIFT TABLE, PLATFORM, HAND TRUCK, SCAFFOLD, FLOOR
JACK AND MECHANIC'S CREEPER**

Related Application

Reference is made to my provisional application no. 60/228,577, filed 8/29/00 entitled
"Combination Lifting and Cart".

FIELD OF THE INVENTION

F2 This invention generally relates to a multi-use portable lift table. The portable lift table can be converted into a tilt-back hand truck, a scaffold, a floor jack or a mechanic's creeper.

BACKGROUND OF THE INVENTION

Various combinations of lifting and moving devices have been known in the past.

U.S. Patent 4,258,826 to Murray discloses a hand cart that can be converted to a step ladder and further discloses a winch that can raise a load to a higher level.

U.S. Patent 3,751,058 to Larsen discloses a combination snow shovel, wheelbarrow and dolly.

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U.S. Patent 6,173,811 to Tornabene et al. discloses a combination hand truck, stepladder and basket carrier.

U.S. Patent 6,189,653 to Laug discloses a multi purpose scaffold.

U.S. Patent 4,494,626 to Ast discloses a combination stepladder and hand truck apparatus.

U.S. Patent 4,488,326 to Cherry discloses a pallet dock lift.

There is a need for a combination lift table, platform, tilt-back hand truck, work bucket, scaffold, floor jack and mechanic's creeper. None of the above patents describe the present invention.

OBJECT OF THE INVENTION

One object of the present invention is to provide a combination lift table, platform, tilt-back hand truck, work bucket, scaffold and mechanic's creeper apparatus which is readily convertible from a compact lift table structure into a rigid multipurpose tools structure. The apparatus is readily convertible from a lift table into a tilt-back hand truck, or readily convertible from a lift table to a scaffold or readily convertible from a scaffold to any of the above-mentioned configurations without the need to transfer a load during operation of the apparatus.

It is another object of the present invention to provide an apparatus that is simple and inexpensive to manufacture, as well as easy to operate and maintain.

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Another objective is to provide an apparatus that can be used by consumers without special tools or training.

Another objective is to provide an apparatus that can be used to complete work from start to finish without the need to transfer a load from one device to another to avoid injury. The apparatus can be used to perform task that uses both the lift table configuration and a modified configuration to produce results superior to using separate devices to perform the tasks.

P2
Another objective is to provide an apparatus that can be maneuvered by consumers without the use of a big vehicle to deliver a load because the lift table is compact and light weight, and requires only a small amount of storage space. This invention can help consumers and businesses save money which might otherwise be spent on the high cost of gasoline.

It is a further object of the present invention to provide a configuration where the load can rest on an extensible device and front scissor legs. When the lift table is elevated, the load will rest on scissor legs that provide different functions from previous inventions, as will be described later.

It is yet another object of the present invention to provide a new and novel combination lift table, tilt-back hand truck that can be elevated from the ground. By converting the

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apparatus and transferring the weight from the lift table to the configuration of the tilt-back hand truck, a load can be moved all the way inside a truck bed where a forklift is unable to reach.

It is still another object of the present invention to provide a pivotally attached support member that carries a load when used as a hand truck. The support plate can be moved upwardly and locked in place providing a compact structure for storage. The support plate can be suspended and lowered to the ground, docked and used as a platform.

An advantage of this invention is a lift assembly mechanism can be folded for compact storage and coupled to the rear portion of the lift table.

The lift table can be elevated to a desired height using the support plate that picks up the load from a truck or dock.

Another object of the present invention to provide a product lighter in weight than what is already known by using light weight swivel wheels which can be rotated and used as a stop. The scissor legs are made of steel or aluminum square tubing instead of heavy steel bars. Extended legs help the scissor legs when more strength is needed for lifting heavier loads.

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It is another object of the invention to provide multiple function attachments which can be coupled using the same coupling devices such as pockets, brackets and locking pins.

The invention has the advantage of making it easier for a user to carry and transport cargo when the apparatus is in the hand truck configuration.

P2 The lift table configured as a mechanic's creeper is usable as a seat to support a worker, as an upright, or as a toolbox.

Another advantage is the lift table configured as a floor jack usable to load or unload automotive parts, large size tires and to raise a vehicle.

The lift table can be inclined for fast convenient loading and unloading with less effort.

The lift table uses a single lift drive for tilting, lifting and lowering with an additional hydraulic device or other drive/control device.

5. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: In figure 1F, 134A has been changed to – 34A--; in figure 1I, 53B has been changed to –55B—and 53A has been changed to –55A--; . In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bridget Avery whose telephone number is 703-308-2086. The examiner can normally be reached on 7:00AM-5:30PM Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Johnson can be reached on 703-308-0885. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bridget Avery
Avery
March 16, 2004
V.W.
3-19-04

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